IN THE CLAIMS:

56. (Currently amended) A carbon foam containing a phase change material in at least some of its pores, wherein the foam is an essentially graphitic carbon foam, further comprising an encasement layer disposed on said foam to prevent loss of the phase change material when said phase change material is in a liquid or gaseous state.

57. (Original) The carbon foam of claim 56 wherein said phase change material is selected from the group consisting of water, acetic acid, paraffin wax, germanium, and germanium-silicon.

58. (Cancelled)

59. (Cancelled)

60. (Previously presented) The carbon foam of claim 56 wherein the foam provides a bulk thermal conductivity greater than about 58 W/m·K.

61. (Original) The carbon foam of claim 60 having an open cell pore structure.

62. (Original) The carbon foam of claim 61 wherein the open cell pore structure is substantially comprised of ellipsoidal pores.

63. (Original) The carbon foam of claim 62 characterized by an X-ray diffraction pattern substantially as depicted in Figure 14.

64. (Original) The carbon foam of claim 62 characterized by an X-ray diffraction pattern having an average d002 spacing of about 0.336.

65. (Currently amended) The carbon foam of claim ~~58~~ 56 wherein the foam provides a bulk thermal conductivity from about 58 W/m·K to about 106 W/m·K.

66. (Previously presented) The carbon foam of claim 65 characterized by an X-ray diffraction pattern exhibiting relatively sharp doublet peaks at 2θ angles between 40 and 50 degrees.

67. (Original) The carbon foam of claim 66 characterized by an open cell pore structure substantially comprised of ellipsoidal pores.

68. (Original) The carbon foam of claim 67 further characterized by graphite substantially aligned along the axes of the cell walls.

69. (Currently amended) ~~The carbon foam of claim 56~~ A carbon foam containing a phase change material in at least some of its pores, wherein the foam is an essentially graphitic carbon foam and wherein the foam provides a specific thermal conductivity greater than about 109 $W \cdot cm^3/m \cdot K \cdot g$.

70. (Original) The carbon foam of claim 69 characterized by an open cell pore structure substantially comprised of pores whose planar cross-sectional images are substantially circular or elliptical.

71. (Previously presented) The carbon foam of claim 69 characterized by an X-ray diffraction pattern having an average d002 spacing of about 0.336 and exhibiting relatively sharp doublet peaks at 2θ angles between 40 and 50 degrees.

72. (Previously presented) The carbon foam of claim 56 wherein the foam provides a specific thermal conductivity from about 109 $W \cdot cm^3/m \cdot K \cdot g$ to about 200 $W \cdot cm^3/m \cdot K \cdot g$.

73. (Original) The carbon foam of claim 72 characterized by an X-ray diffraction pattern substantially as depicted in Figure 14.

74. (Original) The carbon foam of claim 72 having an open cell structure with graphite aligned along the cell wall axes, said carbon foam being derived from a mesophase pitch.

75. (Original) The carbon foam of claim 72 derived from a mesophase pitch.

76. (Previously presented) The carbon foam of claim 56 wherein the foam provides a specific thermal conductivity greater than copper.

77. (Original) The carbon foam of claim 76 characterized by an open cell pore structure substantially comprised of ellipsoidal pores.

78. (Previously presented) The carbon foam of claim 77 characterized by an X-ray diffraction pattern exhibiting relatively sharp doublet peaks at 2θ angles between 40 and 50 degrees.

79. (Original) The carbon foam of claim 78 derived from a mesophase pitch.

80. (Previously presented) The carbon foam of claim 56 wherein the foam provides a specific thermal conductivity greater than four times that of copper.

81. (Previously presented) The carbon foam of claim 80 characterized by an X-ray diffraction pattern exhibiting relatively sharp doublet peaks at 2θ angles between 40 and 50 degrees and an average d002 spacing of about 0.336.

82. (Original) The carbon foam of claim 80 characterized by an open cell pore structure substantially comprised of pores whose planar cross-sectional images are substantially circular or elliptical.

83. (Original) The carbon foam of claim 82 derived from a mesophase pitch.

84. (Original) The carbon foam of claim 83 characterized by an X-ray diffraction pattern substantially as depicted in Figure 14.

128. (Previously presented) The carbon foam of claim 56 wherein the carbon foam is a non-oxidatively stabilized foam derived from a mesophase pitch, the carbon foam having an open cell structure and a specific thermal conductivity greater than copper.

129. (Original) The carbon foam of claim 128 having a specific thermal conductivity greater than four times that of copper.

130. (Original) The carbon foam of claim 129 characterized by an X-ray diffraction pattern having an average d002 spacing of about 0.336.

131. (Previously presented) The carbon foam of claim 56 wherein the carbon foam is a non-oxidatively stabilized foam derived from a mesophase pitch, the carbon foam having an open cell structure and a bulk thermal conductivity from about 58 W/m·K to about 106 W/m·K.

Please add the following claims: --

132. (New) The carbon foam of claim 56, wherein the foam provides a specific thermal conductivity greater than about 109 $W \cdot cm^3/m \cdot K \cdot g$.

133. (New) The carbon foam of claim 69, further comprising an encasement layer disposed on said foam to prevent loss of the phase change material when said phase change material is in a liquid or gaseous state. --